

## INTERNATIONAL SEARCH REPORT

 Inte      al Application No  
 PCT/IB 03/06304

## A. CLASSIFICATION OF SUBJECT MATTER

 IPC 7    C07K16/28    A61K39/395    C12N15/13    C12N5/10    C12N15/63  
           A61P37/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

 Minimum documentation searched (classification system followed by classification symbols)  
 IPC 7    C07K    A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, CHEM ABS Data, MEDLINE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AGATA Y ET AL: "Expression of the PD-1 antigen on the surface of stimulated mouse T and B lymphocytes." INTERNATIONAL IMMUNOLOGY. ENGLAND MAY 1996, vol. 8, no. 5, May 1996 (1996-05), pages 765-772, XP000971773 ISSN: 0953-8178 page 770, left-hand column, line 9 -page 771, right-hand column, line 14 ---	1-34
X	WO 02/078731 A (WYETH) 10 October 2002 (2002-10-10) page 117; example 10 page 134; example 25 --- -/--	1-34

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance  
 "E" earlier document but published on or after the international filing date  
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  
 "O" document referring to an oral disclosure, use, exhibition or other means  
 "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  
 "&" document member of the same patent family

Date of the actual completion of the international search

10 May 2004

Date of mailing of the international search report

18/05/2004

Name and mailing address of the ISA

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 01/27272 A (MATSUO TOSHIHIKO ;HAMILTON BROOK SMITH & REYNOLD (US)) 19 April 2001 (2001-04-19) example SEQ ----	2
X	EP 0 945 464 A (CAMBRIDGE ANTIBODY TECH) 29 September 1999 (1999-09-29) example SEQ ----	2
X	WO 01/27279 A (CAMBRIDGE ANTIBODY TECH ;EDWARDS BRYAN MICHAEL (GB); MAIN SARAH HE) 19 April 2001 (2001-04-19) example SEQ ----	2
X	US 5 837 845 A (HIRAKAWA YOKO ET AL) 17 November 1998 (1998-11-17) example SEQ ----	2
A	VAUGHAN T J ET AL: "HUMAN ANTIBODIES WITH SUB-NANOMOLAR AFFINITIES ISOLATED FROM A LARGE NON-IMMUNIZED PHAGE DISPLAY LIBRARY" NATURE BIOTECHNOLOGY, NATURE PUBLISHING, US, vol. 14, 1 March 1996 (1996-03-01), pages 309-314, XP000196144 ISSN: 1087-0156 cited in the application the whole document ----	1-34
A	DAVIES J ET AL: "Affinity improvement of single antibody VH domains: residues in all three hypervariable regions affect antigen binding" IMMUNOTECHNOLOGY, ELSEVIER SCIENCE PUBLISHERS BV, NL, vol. 2, no. 3, 1 September 1996 (1996-09-01), pages 169-179, XP004070292 ISSN: 1380-2933 the whole document -----	1-34

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## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 12-14 and 25-34 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 02078731	A	10-10-2002	CA 2442182 A1 EP 1385533 A1 NO 20034385 A WO 02078731 A1	10-10-2002 04-02-2004 25-11-2003 10-10-2002
WO 0127272	A	19-04-2001	WO 0127272 A1 AU 6422799 A CA 2386177 A1 EP 1222278 A1	19-04-2001 23-04-2001 19-04-2001 17-07-2002
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WO 0127279	A	19-04-2001	AU 7676300 A WO 0127279 A1	23-04-2001 19-04-2001
US 5837845	A	17-11-1998	US 5767246 A US 5990297 A CA 2072249 A1 DE 69224496 D1 DE 69224496 T2 EP 0520499 A1 ES 2115626 T3 JP 3236667 B2 JP 5304987 A US 5990287 A US 6139869 A	16-06-1998 23-11-1999 29-12-1992 02-04-1998 09-07-1998 30-12-1992 01-07-1998 10-12-2001 19-11-1993 23-11-1999 31-10-2000